UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,964	09/16/2003	Glenn M. Boles	Boles 3-4-30	2670

47394 7590 11/29/2007

HITT GAINES, PC
ALCATEL-LUCENT
PO BOX 832570
RICHARDSON, TX 75083

EXAMINER	
MERED, HABTE	

ART UNIT	PAPER NUMBER
2616	

NOTIFICATION DATE	DELIVERY MODE
11/29/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket@hittgaines.com

Office Action Summary	Application No.	Applicant(s)	
	10/663,964	BOLES ET AL.	
	Examiner	Art Unit	
	Habte Mered	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 21-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 21-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed on 9/14/2007 has been entered and fully considered

2. Claims 1-14 and 21-26 are pending in the instant Application. Claims 15-20 have been cancelled and 21-26 are new claims. Claims 1, 8, and 21 are now the base independent claims.

Claim Objections

3. Claim 21 is objected to because of the following informalities: the limitation regarding the encoder effectively requires idle symbols being replaced by idle symbols in the interpacket gap. There is no purpose for such a replacement and the specification clearly teaches that some of the idle symbols are replaced by non-idle symbols for the purpose of transmitting out of band control information. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1, 2, 5, and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna et al (US 20050041695), hereinafter referred to as Bordogna in view of Furlong et al (US 6, 741, 566), hereinafter referred to as Furlong.

Bordogna teaches a method and apparatus where by bandwidth of an egress port is adjusted by varying an inter-packet gap size between each packet so that the packets can be delivered without overflowing an egress buffer.

5. Regarding **claim1**, Bordogna teaches a process for transmission of a message in a system, the process comprising the steps of sending, receiving, or propagating 1) more than one packet (See Figure 2) and 2) an Interpacket gap **(Figure 2, elements 2201...N)**, the packet comprising a start-of-stream delimiter **(See Paragraph 23)**, and a series of at least 16 message bytes encoded in symbols uninterrupted by a control symbol **(Since Bordogna's system is fully compliant to IEEE 802.3 standards as illustrated in paragraphs 1 and 4 and given that the Applicant has admitted any IEEE 802.3 compliant system uses to send data 16 symbols by default Bordogna's system meets the limitation)**, and the Interpacket gap comprising a plurality of symbols decoded as Idle symbols. **(See Paragraphs 9 and 35 and Figure 6)**

Bordogna fails to teach that the Interpacket gap includes at least one non-Idle symbol such that the presence of the non-Idle symbol is part of a message.

Furlong teaches remote management of Ethernet networks and devices.

Furlong discloses that the Interpacket gap includes at least one non-Idle symbol such that the presence of the non-Idle symbol is part of a message. **(See Figure 2, element 70 and Column 2:65-67)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Bordogna's process by using an Inter-packet gap that

includes at least one non-Idle symbol such that the presence of the non-Idle symbol is part of a message. The motivation being such a scheme provides reliable in-band signaling as stated in Furlong's Column 1:5-10, 25-30, and 40-45.

6. Regarding **claim 2**, Bordogna discloses a system wherein the system comprises Fast Ethernet **(See Paragraph 5)**

7. Regarding **claim 5**, Bordogna discloses a system wherein the system comprises Gigabit Ethernet **(See Paragraph 5)**

8. Regarding **claim 7**, Bordogna fails to disclose a process wherein the message comprises a side channel.

Furlong discloses a process wherein the message comprises a side channel. **(See Figure 2, element 70 and Column 2:65-67. The side channel is management channel)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Bordogna's process by using an Inter-packet gap that includes at least one non-Idle symbol such that the presence of the non-Idle symbol is part of a message and the message comprises a side channel. The motivation being such a scheme provides reliable in-band signaling as stated in Furlong's Column 1:5-10, 25-30, and 40-45.

9. **Claims 3 and 4**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna in view of Furlong as applied to claim 2 above, and further in view of Shin et al (US Pub. No. 2003/0227947), hereinafter referred to as Shin.

Shin discloses method and system for communicating control information via out-of-band symbols.

10. Regarding **Claims 3 and 4**, the combination of Bordogna and Furlong fails to disclose a process wherein the non-idle symbol in the inter-packet gap is the symbol for zero and has only one zero bit.

Shin discloses a process wherein the non-idle symbol in the inter-packet gap is the symbol for zero and has only one zero bit. **(See Paragraphs 140 and 166 – Null symbol is used for control)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Bordogna's and Furlong's process by using an additional step wherein the non-idle symbol in the inter-packet gap is the symbol for zero and has only one zero bit. The motivation is to still comply to IEEE 802.3 standard for inter-packet gap while being able to send message using side channel or out-of-band signaling.

11. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna in view of Furlong as applied to claim 5 above, and further in view of Song et al (US 2003/0137975 A1), hereinafter referred to as Song.

12. Regarding **Claim 6,** the combination of Bordogna and Furlong fails to disclose a process wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence.

Song teaches Ethernet passive optical network with framing structure for native Ethernet traffic.

Song discloses a process wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence. **(See Paragraph 70)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Bordogna's and Furlong's process by using an additional step wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence. The motivation is to still comply to ANSI T11 standard for inter-frame gap while being able to send message using side channel or out-of-band signaling.

13. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna et al (US 20050041695), hereinafter referred to as Bordogna in view of Sambamurthy et al (US 6, 085, 248), hereinafter referred to as Sambamurthy.

14. Regarding **claim 8**, Bordogna teaches a process for transmission of a message in a system, the process comprising the steps of sending, receiving, or propagating 1) more than one packet (See Figure 2) and 2) an Interpacket gap **(Figure 2, elements 2201...N)**, the packet comprising a start-of-stream delimiter **(See Paragraph 23)**, and a series of at least 16 message bytes encoded in symbols uninterrupted by a control symbol **(Since Bordogna's system is fully compliant to IEEE 802.3 standards as illustrated in paragraphs 1 and 4 and given that the Applicant has admitted any IEEE 802.3 compliant system uses to send data 16 symbols by default Bordogna's system meets the limitation)**,

Bordogna fails to teach a packet that includes a plurality of non-standard symbols as part of a message.

Sambamurthy teaches MAC transmitter and parallel network management system.

Sambamurthy discloses a packet that includes a plurality of non-standard symbols as part of a message. **(Column 20:43-67)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Bordogna 's process by transmitting a packet that includes a plurality of non-standard symbols as part of a message. The motivation as stated by Sambamurthy is to allow the transmitter attend to the unique needs of the receiver as illustrated in Column 20:43-67.

15. **Claims 9, 10, and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna in view of Sambamurthy as applied to claim 8 above, and further in view of Leroux et al (US Pub. No. 2003/0235214), hereinafter referred to as Leroux.

16. Regarding **claim 9**, the combination of Bordogna and Sambamurthy fails to disclose a process wherein the inter-packet gap includes both at least one symbol decoded as an idle symbol and at least one non-idle symbol such that the presence of the non-idle symbol is part of a message.

Leroux discloses service channel over the Ethernet inter-frame gap.

Leroux discloses a process wherein the inter-packet gap includes both at least one symbol decoded as an idle symbol and at least one non-idle symbol such that the presence of the non-idle symbol is part of a message. **(See Figures 1 and 2 and paragraphs 13-15)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Bordogna's and Sambamurthy's process by using an Inter-packet gap that includes at least one non-Idle symbol such that the presence of the non-Idle symbol is part of a message. The motivation being such a scheme provides reliable in-band signaling as stated in Leroux's paragraph 14.

17. Regarding **claim 10**, Bordogna discloses a system wherein the system comprises Fast Ethernet **(See Paragraph 5)**

18. Regarding **claim 13**, Bordogna discloses a system wherein the system comprises Gigabit Ethernet **(See Paragraph 5)**

19. **Claims 11 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna in view of Sambamurthy and Leroux as applied to claim 10 above, and further in view of Shin et al (US Pub. No. 2003/0227947), hereinafter referred to as Shin.

20. Regarding **Claims 11 and 12**, the combination of Bordogna, Sambamurthy and Leroux fails to disclose a process wherein the non-idle symbol in the inter-packet gap is the symbol for zero and has only one zero bit.

Shin discloses a process wherein the non-idle symbol in the inter-packet gap is the symbol for zero and has only one zero bit. **(See Paragraphs 140 and 166 – Null symbol is used for control)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Bordogna's, Sambamurthy's and Leroux's process by using an additional step wherein the non-idle symbol in the inter-

packet gap is the symbol for zero and has only one zero bit. The motivation is to still comply to IEEE 802.3 standard for inter-packet gap while being able to send message using side channel or out-of-band signaling.

21. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bordogna in view of Sambamurthy and Leroux as applied to claim 13 above, and further in view of Song et al (US 2003/0137975 A1), hereinafter referred to as Song.

22. Regarding **Claim 14,** the combination of Bordogna, Sambamurthy and Leroux fails to disclose a process wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence.

Song discloses a process wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence. **(See Paragraph 70)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Bordogna's, Sambamurthy's and Leroux's process by using an additional step wherein the non-Idle symbol comprises a K28.5/Dxx.y or K28.1/Dxx.y sequence. The motivation is to still comply to ANSI T11 standard for inter-frame gap while being able to send message using side channel or out-of-band signaling.

23. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin et al (US Pub. No. 2003/0227947), hereinafter referred to as Shin in view of Jones (UK Patent Application GB 2366161 A).

Shin teaches a method and system for communicating control information via out-of-band symbols.

24. Regarding **claim 21**, Shin teaches an apparatus **(Figure 2)**, comprising: a transmitter **(Figure 2, 231)** configured to transmit a signal having a plurality of packets and an interpacket gap **(Paragraph 106 in relation to Figure 9C)**, the interpacket gap having symbols decoded as an Idle symbol **(As illustrated in Paragraph 87 it is clear that an control symbol can be used as an idle symbol and be inserted in between the interpacket gap)**, the transmitter including: a buffer configured to store a message to be inserted into the interpacket gap **(Figure 2, 223 and 222 has to have a buffering capability as illustrated in paragraphs 80 and 82)**; a formatter configured to modify a bit stream representing the message to allow identification of message boundaries and to allow establishment of word alignment within the bit stream **(Figure 2, 212, packetizer is effectively a formatter as indicated in paragraph 79)**; and an encoder **(Figure 2, 221 and 222 and also see paragraph 80)** configured to substitute at least one message symbol for one of the symbols decoded as an Idle symbol in the interpacket gap to encode at least a portion of the message into the interpacket gap, wherein the at least one message symbol is decoded as an Idle symbol. **(See in general paragraph 106 in relation with Figure 9C, paragraph 98 in relation with Figure 9A, paragraphs 80, 82, 87, 90)**

Shin fails to expressly disclose that the idle symbols are replaced by non-idle symbols in the interpacket gap.

Jones teaches sending communication timing information.

Jones discloses that the idle symbols are replaced by non-idle symbols in the interpacket gap. **(See page 11, Lines 1-6 and 18-25. Note that interpacket gaps**

according to 802.3 standard as well as Shin as well as Applicant's teachings concur in that idle symbols normally occupy an interpacket gap and Jones clearly teaches how and with what these idle symbols are replaced.)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Shin's apparatus by using in place of at least one of the symbols decoded as an idle symbol to encode as a symbol at least a portion of the message in the interpacket gap. The motivation being such a scheme provides reliable in-band signaling and is transparent to the normal system data transfer operation and bandwidth availability and allows precise synchronization by sending timing information out of band as stated by Jones on page 4, Lines 9-15.

25. **Claims 22-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin in view of Jones as applied to claim 21 above, and further in view of Thi et al (US Pub. No. 2002/0061012 A1)

Thi *discloses a cable modem with voice over IP and fax capabilities.*

26. Regarding **claim 22**, the combination of Shin and Jones fails to disclose an apparatus wherein the formatter is configured to modify the bit stream with an HDLC flag.

Thi discloses an apparatus wherein the formatter is configured to modify the bit stream with an HDLC flag. **(See Paragraphs 434 and 435)**

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Shin's and Jones' apparatus by a

formatter configured to modify the bit stream with an HDLC flag. The motivation to do so is to incorporate use of new services such as fax as stated by Thi in paragraph 434.

27. Regarding **claim 23**, the combination of Shin, Jones and Thi discloses an apparatus wherein the formatter is configured to insert a logic zero to the bit stream to avoid recognition of a portion of the message as the flag. **(See Shin Figure 21A)**

28 Regarding **claim 24,** the combination of Shin, Jones and Thi discloses an apparatus wherein the signal comprises an Ethernet signal. **(See Jones Figure 5 but all teach some form of signal that is Ethernet standard compliant)**

29. Regarding **claim 25**, the combination of Shin, Jones and Thi discloses an apparatus wherein at least one message symbol substituted by the encoder represents logic 1. **(See Shin Figures 20 and 21A)**

30. Regarding **claim 26**, the combination of Shin, Jones and Thi discloses an apparatus wherein at least one message symbol substituted by the encoder represents logic 0. **(See Shin Figures 20 and 21A)**

Response to Arguments

31. Applicant's arguments filed on 9/14/2007 have been fully considered but they are not persuasive.

32. In the Remarks, with respect to claim 1, on page 5 in Section I, Applicant argues that the secondary reference, Furlong fails to teach the limitation requiring an interpacket gap that contains idle symbols and at least one non-idle symbol such that the presence of the non-idle symbol is part of a message. Applicant indicates that the management frame inserted in an interframe gap as taught by Furlong fails to address

the limitation because the management frame contains start and end of a frame and cannot be considered part of a message containing the interframe gap.

Examiner respectfully disagrees with all of the conclusions reached by the Applicant with respect to claim 1.

First with respect to the use of "message" in claim 1 it is the understanding of the Examiner message simply means user data uninterrupted by control symbol or control information as supported by the specification in Figure 1. Given this definition Applicant's argument of Furlong's interframe gap being not a part of a message is incorrect. Interframe and interpacket gaps are gaps between consecutive frames or packets and have nothing to do being part of a message or not.

Second the limitation only requires that the idle symbols be replaced by some thing other than an idle symbol and Furlong adequately meets this requirement.

Third, Furlong's system like the Applicant is compliant to IEEE 802.3 and consequently the interpacket gaps are populated by idle symbols and part of those idle symbols are replaced by a management frame or packet which certainly has its equivalent symbols that are not idle.

33. In the Remarks, with respect to claim 8, on page 7 section IV, Applicant argues that the secondary reference, Sambamurthy fails to show the claimed limitation that requires "a packet that includes a plurality of non-standard symbols as part of a message" in Column 20:43-47 as cited by Examiner in the previous Office Action.

Examiner respectfully disagrees with all of the conclusions reached by the Applicant with respect to claim 8.

Again the previous Examiner's comments with respect to claim 1 directly applies again here.

With respect to the use of "message" in claim 8 it is the understanding of the Examiner message simply means user data uninterrupted by control symbol or control information as supported by the specification in Figure 1. Given this definition Applicant's argument that Sambamurthy fails to teach the limitation is incorrect. First Examiner cited Column 20:43-67 and not only Column 20:43-47. At any rate, Sambamurthy in Column 20:47-62 unambiguously teaches the limitation in question.

34. With respect to newly added claim 21, the newly cited secondary reference, Jones, unequivocally teach an idle symbol in an interpacket gap being replaced by another symbol that is not considered idle symbol and it is the position of the Examiner that the new combination of Shin and Jones teaches adequately the new as well as the old independent claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Habte Mered whose telephone number is 571 272 6046. The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris H. To can be reached on 571 272 7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HM
11-20-2007

DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600